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Christensen, Jesper Lindgaard

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# **Venture Capital – Filters, Hubs and Catalysts for Entrepreneurs?**

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**Associate Professor  
Jesper Lindgaard Christensen  
Dept. of Business Studies  
Aalborg University  
Denmark  
jlc@business.aau.dk**

## ***Abstract***

A smooth functioning of capital markets is an important prerequisite for the development of new ventures. Based on existing studies and interviews with key actors in the market this paper specifies the functions of financial institutions as 'filters', 'hubs' and 'catalysts'. It further investigates if these functions are distorted by recent trends at the capital market.

The literature on financial intermediation has frequently been split into two different strands. On the one hand, studies have dealt with the role of financial intermediation in innovation systems and the specific financial institutions that make up the financing system. However, it has rarely been discussed what is actually going on in this intermediation. On the other hand, a number of micro-level studies have focused upon the single transaction, for example exploring the (contractual) relations between investor and investee from a principal-agent perspective, or discussing the impact of information asymmetries between a lender and a borrower.

The contribution of this paper is to bridge these two approaches by discussing the nature of the intermediation process at a micro-level, whilst at the same time to investigate the impact of the development of the innovation- and financial system.

Venture capital firms are particularly relevant for entrepreneurs as they act as filters, hubs and catalysts for entrepreneurial firms. Networks are important pre-conditions for fulfilling these functions, but just as there are differences between financial institutions there are differences in the configuration and nature of the networks they use. The cost of building competences and networks are often sunk and cannot easily be reallocated to other relationships.

Recently venture capital firms in Europe have moved upwards in the size of target firms and size of investments, leaving smaller firms deprived of financing. As a result there is now a quantitative, pecuniary financing vacuum. Venture capital firms have over time created networks and can be denoted 'extended knowledge bases' that are geared towards assisting specific types of investments. Networks are thus specific to the stage of investments or industry that venture capital firms target their investments. However, this investment in building a web of complementary competencies risks being destructed by the recent trend of shifting focus of investment targets. Capital is easily moved to other target firms, whereas networks and competencies involves time and costs to build.

Some of the implications involved are that it may be necessary to not only fill the pecuniary gaps at the capital market, but rather the bridging of relationships between actors at the market may be an important task.

**Keywords:** Venture capital, financial intermediation, entrepreneurship, networks, financing gap.

## **1. Introduction**

Generally financial institutions and markets support entrepreneurship by granting credit and channeling savings to investments. However, as simple as it may sound the specific mechanisms behind this process are diverse and complex involving a wide range of different financial institutions.

The literature on this has often tended to be in two separate strands. On the one hand systemic/macro oriented studies have been rather general, focusing on the role of finance in innovation systems, rather than the workings of specific financial institutions that make up this financing system (Christensen, 1992, Zysman, 1983 and numerous later contributions using the framework of capital market based and bank-oriented financial systems).

On the other hand a number of micro-level studies have focused upon the single transaction or the interaction between two actors, for example exploring the (contractual) relations between investor and investee from a principal-agent perspective (Shepherd and Zacharakis, 2001, Reid, 1999), or discussing the impact of information asymmetries between a lender and a borrower (Stiglitz and Weiss, 1981, Leland and Pyle, 1977).

The contribution of this paper is to bridge these two approaches by discussing the nature of the intermediation process at a micro-level, whilst at the same time to put it in a more general perspective of the innovation and financial system. Hence this paper discusses the functions fulfilled by financial institutions and the impact of the system in which these functions are embedded. A specific type of financial intermediary is in focus. Venture capital is argued to be a type of financial institution particularly relevant for entrepreneurs as they are acting as filters, catalysts and hubs for entrepreneurial firms. It is, however, important to consider also the interplay and division of labour with other actors on the market; the financial system in which venture capital firms function. Networks is an important pre-condition for fulfilling these functions. Just as there are differences between financial institutions and the transactions and functions they undertake there are also important differences in the networks they use. This paper highlights requirements for efficient use of networks and discuss if they are currently at risk of being dismantled caused by recent trends in the venture capital market.

This paper proceeds with discussion of financing innovation and entrepreneurship. It is shown how systemic features impact on micro relations. Section three shows in more detail what are the three functions mentioned above. The preconditions for fulfilling these functions are laid out in section four. It is discussed at the end of this explorative paper if the recent development in the venture capital market may have seriously distorted the three functions in a manner that produce a financing gap, which is more than a pecuniary one, rather more qualitative and lasting.

## **2. Basic features of the role of financial capital in entrepreneurship**

### **2.1 Standard perceptions of the functioning of financial markets – market-based, transactional financial markets and relational markets**

Financial markets are often seen in traditional finance theories as working close to a perfect competition situation. Prices are seen as being rapidly cleared on a central market where all agents have all the relevant information. The market-based, transactional financial markets are characterised by a relatively high degree of standardisation of transactions. The bond market is an example. The “products” traded are homogeneous and transactions are based on information which is primarily general, articulated and public. The direct contact between the trading parties is either limited or absent (Neave, 1991).

Contrary, the relational type of financial transactions are often based on private, tacit, specific information and this information is often asymmetrically distributed. The information on transactions is often kept between two parties who negotiate on a private basis using information closely related to a specific project or firm. The interaction between the parties is intense and the high degree of asymmetries of information and the fact that risks are non-calculable, makes trust important to the interplay between the parties. This means that initial screening costs are relatively high and that the screening to a large extent is on assessing the abilities and willingness of specific people rather than a bond-issuing institution or the likely development of a pool of shares. The transaction and assessments are more related to the character of the two, or more parties involved and the actual use of the capital supplied rather than the "product" itself. An example is what have been denoted the business angels market.

Capabilities to handle these different kinds of transactions differ according to which type of financing or in other terms governance mechanism is chosen. In general, the more transactions are characterised by uncertainty and discretion, the more screening and monitoring capabilities are needed (Williamson, 1988). In contrast, frequently occurring standard transactions under risk, need limited screening and monitoring, and learning effects are reduced to a minimum (Haubrich, 1989, Neave, 1991).

## **2.2 The division of labour of financial institutions – implications for entrepreneurship**

In order to minimise costs in transactions and to focus competencies many financial institutions specialise, often resulting in a division of labour between financial institutions. Segmentation of the market and the division of labour depends on the demand and the competition in the market between financial institutions. Therefore, the existing segmentation of the market is not static. Through learning processes and strategic efforts to develop competencies financial institutions engage in new areas of businesses.

Through this dynamic process financial institutions are specialised in different areas of business with respect to which stage of development (or size) of the firm they primarily finance; which amount they typically finance; the type of capital; the time horizon; the degree of interaction and advice to the firm. In some cases there may even be a geographical specialisation (Christensen, 2007). This gives room for a complementarity between financial institutions. By financing e.g. different stages of development, the firms may supplement each other. Venture capital firms are part of a wider system where important institutions feed venture capital firms with relevant investment opportunities by financing the seed phase of firms just as there are financing mechanisms for taking over the relay after venture capital firms have financed the entrepreneurial firm.

## **3. Specific functions of venture capital firms in financing entrepreneurship**

The above needs to be further detailed and related to the functions that venture capital firms undertake in the relationship to the entrepreneurs. Although there is some overlap them these functions are filters, hubs and catalysts. They nevertheless facilitate understanding of the nature of this special intermediation process.

### 3.1 Filtering 'good' and 'bad' projects

There will always be debate on if there is a lack of financial capital or absence of good investment opportunities. This debate will never be resolved because a good investment opportunity will only show to be 'good' ex post, whereas the investment decision must be taken ex ante. Regardless of the debate, there is no doubt that there has to be barriers to financing entrepreneurship. It would be socially inexpedient to have too little restrictions on financing entrepreneurship. Venture capital firms participate in this ex ante selection of good and bad projects and are as such important filters in relation to entrepreneurial projects. The ability to fulfil this filtering task is an important element in a well-functioning financial system.

In fact even in a pre-screening phase venture capital firms have a filtering effect. By signalling criteria for investments and requirements to the content and quality of the business plan venture capital firms filter out some entrepreneurs who cannot meet the criteria and requirements.

What has been labelled the new economy' (OECD, 2000) might challenge the way venture capital firms operate and fulfil this function. When firms are increasingly based upon intangibles, the due diligence and screening of potential investments changes. Traditional models for assessing the value of a firm are often inadequate, for example the cash flow is often absent, as is collateral. To a much larger extent, the initial screening is based upon assessing "knowledge assets", the quality and uniqueness, volatility, and whether the knowledge is subject to fluctuations, for example by heavy reliance on the knowledge of one person, who may move from the organisation.

### 3.2 Venture capital as hubs

The hub function concerns the fact that venture capital firms often act as a networker. Venture capital firms provide links between the firm and external partners (Florida and Kenney, 1988). In particular, venture capital firms typically help portfolio firms with links to other, complementary financing sources (Christensen, 2006). Moreover, the venture capital financing of a firm may function as a signal enabling firms to have reputational capital when negotiating with other business partners (Frederiksen, 1997, Shane and Cable, 2002). Therefore, the venture capital firms may have an indirect effect on other external partners. This has even been claimed to be so valuable that firms are willing to pay a premium to be affiliated or financed by venture capital (Hsu, 2004). Second, the venture capital firms may have a direct mediating role in that they try to stimulate synergies between portfolio firms.

Networks among the venture capital firms is another important feature of the hub function of venture capital. Even early in venture capital research, (Bygrave, 1987) it was found that such networks and syndications are valuable not just as a measure for spreading risk but also, and as the primary reason, for sharing knowledge and learning. In venture capital firms with portfolios of high technology and/or early stage firms networking is more intense (ibid.). This is probably explained by the higher asymmetry of information in such firms. More recent studies of venture capital networks (Hochbert et al., 2007) even find that networked venture capital firms perform better, not only because networks are important access to good deal flow and screening, as mentioned by Stuart and Sorensen (2001), but also because it allows them to provide better post-investment assistance. Because of the above-mentioned attractiveness of venture capital financing, and high performing or prestigious venture firms in particular, the reverse causality may be working: because of good performance venture capital firms are able to improve their networking position.

This web of contacts constitute what may be denoted an extended knowledge base that may be activated when assisting the portfolio firms. Efficiency in the firm may increase as a result of interaction with a venture capital firm because an increased stock of expertise and advice will become available through the network of the venture capital firm (Hochbert et al., 2007). It is likely that the venture capital firms may be an entrance to e.g. important industrial collaborators, allowing for synergies among the portfolio firms. Florida and Kenney (1988) see venture capitalists as being both in between and central to several different types of networks such as the financial network, a network used in the location

of investment opportunities and their screening, a third network consisting of accounting firms, lawyers, consultants, and other professional service firms, and a personal network used to ensure the human resources in the entrepreneurial firm concerning both management and technical aspects.

An additional 'hub-function' is that the venture capital firms' function as an entrance for other types of investors to this very risky part of the market of financing knowledge based entrepreneurs. Navigating in such a market requires competencies, which are costly to build up and maintain. Therefore, many investors, who want to participate in this segment of investment opportunities, do so by investing in venture funds rather than establishing independent, new entities. Alternatively they syndicate investments and let the syndicating partner act as lead investor.

The hub function also comes into play when venture capital firms receive proposals outside their investment range and redirect applicants to other venture capital firms or totally other types of financing sources. Information on the most suitable venture capital firm or other financing source is not always readily available to entrepreneurs or small or new firms.

A final hub function is that venture capital, through time limits on their ownership, may function as an intermediate step before bringing the firm to another stage of development, often by way of trade sale to another industrial partner.

It may be concluded that theories on the entrepreneur - venture capital firm interaction must take into account not only the information and knowledge of the two parties in question, but also the wider environment in which they are parts, especially the contribution of the network of the two parties in this respect. The literature has primarily focused upon dyads.

### **3.3 Venture capital as catalysts of entrepreneurial processes**

Venture capital firms may catalyze high-tech start-ups in a number of ways. Venture capital firms finance and assist firms, as discussed below, but it is now also the case that venture capital firms actively start up firms by way of licensing good ideas and hire talent to create a firm to carry out the commercialisation of the idea. This pattern has emerged in particular in the bio-tech industry.

Another way to catalyze entrepreneurship is a more indirect and societal way in that success stories of venture-backed high-growth entrepreneurs are stimulating both incentives to start-up and the awareness of venture capital as a possible source of financing and excel the growth of the business. The impact on catalyzing knowledge-based entrepreneurship of these success stories is difficult to estimate but is likely to be huge.

A third way of catalyzing innovation and high-tech entrepreneurship is the ability of venture capital firms to use their broad and deep flows of information and knowledge on technological opportunities to enhance a wave of technological development that may challenge or re-direct the existing technological trajectory. While the impact of venture capital may not be strong enough to create new technological trajectories and be drivers of new industries, then they are important in catalyzing the commercialisation of newly developed technologies in their emerging phase. They are in this sense part of the commercialisation and wider diffusion of the technologies developed (Mason & Harrison, 1999).

The exact socio-economic impact of financing innovation in general, and in particular venture capital, is difficult to estimate. However, it seems to an established perception that even if venture capital overall is only financing a very small proportion of firms and hence may seem of neglect able importance, then venture capital may be important for certain segments of firms, in particular those in focus at this ECEI-conference; new, innovative, entrepreneurial firms.

A fourth way to catalyze entrepreneurship through venture capital is that venture capital firms provide post-investment nursing of the portfolio firms. This enables the venture capital firms to assist the development of the portfolio firm, and may through this involvement function as a catalyst for growth processes within the investee firm (Mason & Harrison, 1999, Christensen, 2006). Venture capital

firms function in their monitoring and assistance to firms as providers of both general business knowledge like marketing, strategy, additional financing and of social capital and network access. Results from empirical surveys indicate that relations to other financing sources, and contacts and networks, are at the top of the list of contributions. This supports the arguments about venture capital firms as hubs for entrepreneurs.

#### ***4. Requirements to fulfil the specific functions of venture capital firms in entrepreneurship***

The previously described functions are very important features of a well-functioning system for financing knowledge based entrepreneurship. It may be argued that they now have become much more explicit and subject to formation of specialised organisations (OECD, 1996).

It seems clear that an important precondition for fulfilling these functions is the competencies of the venture capital firm, which is closely related to their specialisation. When focused upon specific segments of the market the possibilities of building up relevant competences increase. Moreover, and related, the place of the single venture capital firm in the division of labour between the institutions on the financial market is determining the possibilities of functioning as hubs, catalysts and filters of entrepreneurs.

In contrast, the entrepreneur may need competencies in economic management and in preparing and presenting a business plan. Often the competencies of the venture capital firm and the entrepreneur are separate. This disparity is not necessarily a disadvantage; a complement of competencies is important. Nevertheless, the parties should be able to talk together using the same codes, and should not be too far apart.

These complementarities may also apply to not only competencies within the dyad, but also with regard to the networks of the two parties. According to Granovetter (1973) networks may be characterised by strong or weak ties that each have their advantages. Strong ties involve frequent contact and exchange of private information. Over time, both codes of transmitting information become more efficient and the information becomes homogeneous. Tacit knowledge is most efficiently transferred through this type of relationship. Networks with weak ties primarily involve less frequent contacts and more heterogeneous knowledge. They are important in bridging different networks and may function as an entrance to these (Burt, 1992). The latter is important in this connection because it extends the knowledge base. Applied to this case there are usually strong ties between the venture capital firm and entrepreneur as previously discussed. But the networks of the entrepreneur and venture capital firm respectably differ. Often networks of an entrepreneur are characterised by strong ties as the knowledge related to start up is often narrow but private, sometimes even based in the family or friends, or affiliated persons of the team starting up the business. The venture capitalist typically has a broad knowledge of different types of knowledge resources (Fiet, 1995). Because of the strong ties between venture capital firm and entrepreneur the venture capital firm may function as a hub to these diverse, weaker networks (Hansen et al., 2000).

It can be stated that the hub, filter and catalyst functions are in turn more easily fulfilled when there is close proximity between the two parties, 'close' being partly comparable to the strong or weak ties discussion above. This proximity may unfold in several dimensions. Boschma (2005) mentions five types of proximity; cognitive, organizational, social, institutional, and geographical. All of these types of proximity are relevant to the analysis of the relationship between venture capital firms and entrepreneurs. However, there are both pros and cons of this proximity, the main pitfall being the risk of lock-in as the incentives for searching other, more rational opportunities may decrease. The implication of the strong or weak ties discussion is also that the extent to which close proximity is an advantage relates to the type of knowledge that needs to be transmitted.

As mentioned, the very transmission of information is easier when relationships have been established and ways of communication that are understandable by both parties have been worked out. Such close relationships tend to be stable, which may be both beneficial and a disadvantage. This

dichotomy has to do with several features of the relationships. One is the mutual irreversible dependence that develops between the entrepreneur and the venture capital firm once the deal has been accepted. Even if the project does not show the expected performance, the venture capital firm has an interest in keeping the entrepreneur solvent as long as there are still opportunities related to the product of the firm. It is likely that venture capital firms are reluctant to withdraw from the deal. Entrepreneurs may also incur considerable costs in breaking up the relationship. First, the entrepreneur will have to pay the costs of searching for a new financier and building up new codes and channels of communication. Second, other venture capital firms may perceive a broken relationship as an indication that the previous venture capital firm had discovered information on the entrepreneur that may harm the situation. In summary, the mere shift of financial connection may harm the reputation of the innovator, and consequently, other financial institutions may charge a cautiousness premium to cover for this potential, hidden information.

## ***5. Conclusions and discussion: are trends in the venture capital market creating a financing and networking vacuum?***

The venture capital industry in Europe has matured. One indicator of this is increased specialisation and division of labour between the venture capital firms, another is that the share of private monies flowing into the industry has risen. However, the recent trend in Europe is also that venture capital firms have moved upwards in the size of target firms and size of investments, (and size of venture capital funds) leaving smaller firms deprived of financing. In several European countries, we now see a heavy involvement of public money in the seed or early stage segment of the market. In some countries more than 90% of investments include public money. The rationale for this public intervention is that there is a financing gap due to this development in the market.

It may be speculated if there is now not only a quantitative, pecuniary financing vacuum. Venture capital firms have over time created networks and 'extended knowledge bases' that are geared towards assisting specific types of investments such as investments in certain stages of the life cycle of a firm. Likewise, the accumulated experiences in venture capital firms are often within a particular technological area or industry in which the venture capitalists develop networks (Berglund et al., 2007). Although dissolution of networks under some circumstances may be beneficial to avoid lock-in, then it may also be that it actually destroys huge investments in the establishment of the prevailing division of labour on the market and in the networks build up over time. For public policy actors it may be necessary to not only fill the pecuniary gaps at the capital market, but rather the bridging of relationships between actors at the market may be an important task.

According to the literature, networks have been argued to be spatially bounded. Spatial proximity may be important because the networks among venture capital firms themselves are also important sources of information, and this type of information is not publicly available (Shane and Cable, 2002). However, they may also be specific to the stage of investments that venture capital firms target their investments. It requires different competences to invest in different firms of different size (Berg-Utby et al., 2007), therefore networks are build in a manner that is specific to the division of labour on the financial market. This division of labour has evolved over time and has required time and effort to establish. However, these investments in building a web of complementary competencies risk being destroyed by the recent trend of shifting focus of investment targets. It could be maintained that in the short run changes in investment targets and new partners in the financing system is just an extension of networks rather than destruction. However, in a longer time perspective they are likely to be destroyed. To take one example, the venture capital part of the capital market was until the burst of the IT bubble characterised by complementarities through syndication and networking between business angels and institutional venture capital. When the institutional venture capital afterwards moved upwards in their target for investments this left the business angels with the burden of financing more rounds of financing than the initial financing and with a lack of the options of benefiting from the networks of venture capital firms. Evidence for this, and indications of the consequences, is the fact that co-investment schemes have become widespread.



Essentially, venture capital firms, when looking at situations of unprofitable terminations of a deal, will consider not only the capital involved but also the time and effort that were spent setting up the information exchange and developing trust. In many cases, the costs of building competences and networks are sunk and often cannot be reallocated to other relationships. Therefore, the higher the exit costs from a relationship, the more the sunk costs are the glue in the relationship and in the market. This goes both at a micro-level between the entrepreneur and the venture capital firm and at a macro-level where a certain division of labour between financial institutions has been established.

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